REMARKS

The Rejection of December 16, 2004 has been reviewed and its contents carefully noted. Reconsideration of this case, as amended, is respectfully requested. Applicants again thank the Examiner for his remarks in the most recent Office Action relative to the prior art. More specifically, Applicants thank the Examiner for his substantial effort in trying to move the claims to allowance given the prior art. Claims 1-6 and 10-72 are currently pending. Claims 1, 6, 29-40, 55 and 71 are amended herein. No claims are canceled herein. Claim 72 has been added herein.

Amendments After Final Rejection

This response to the Examiners Final Rejection includes within it the amendment of several claims. Amendments such as these can be included within a response to such a Final Rejection if such amendments are made for good and sufficient reasons, as laid out by CFR § 1.116. Justifications for such amendments include: 1) the Applicant's attempt to answer new issues or rejections raised by the Examiner; 2) the amendments reduce the issues to be considered in an appeal; and/or 3) the amendments leave the application in better condition for allowance.

In this instance all possible efforts have been put forward to remove all the Examiners' rejections to the remaining claims by amending the claims to more accurately reflect the essence of the current invention, distinguish the current invention from the prior art and to provide claims well within the ambit of the invention provided by the Applicants. The Applicant believes that the amendments which have been made, along with the nature of this response and the graphic examples provided here serve to put all the remaining claims in better condition for allowance. This is also true with respect to the canceled claim as well as with the claims which were amended.

Given the above, it is specifically and respectfully requested that the Examiner allow the amendments after final, made herein, and the new dependent claim 72 added.

Withdrawal of Rejections

Applicants thank the Examiner for the withdrawal of the rejections under 35 U.S.C. §112, first and second paragraphs as well as the removal of the objection based on informality. Please note that a Notice of Appeal has been filed herewith.

Changes to Specification & Figures

Applicants thank the Examiner for entering the previous amendments to the Specification and Figures.

Point of Clarification

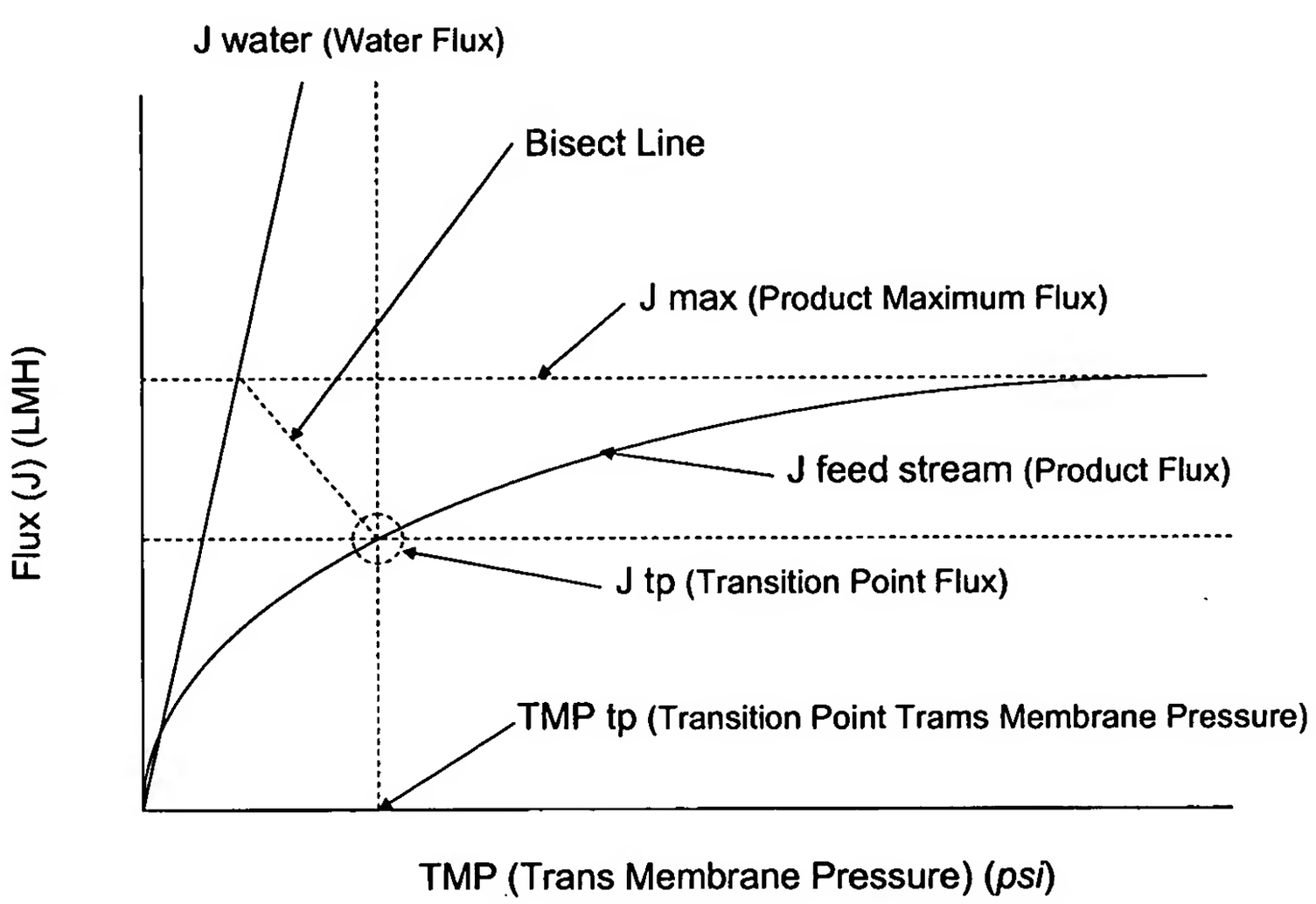
The previous office action cited the Kondo et al., patent as a basis for an obviousness rejection, the current citation is to van Reis in light of Kunihau with the explanation noted as "explained" previously. Since Kunihau was not explained previously from the Examiner's viewpoint clarification is respectfully requested. However, given the amendments to the claims Applicants believe that the amended claims are clearly outside not just van Reis but also non-obvious in light of both Kondo et al., and Kunihau et al.

The Rejections Under 35 U.S.C. §102 and §103

Claims 1-6, 10-71 are rejected under either 35 U.S.C. §102 as anticipated or rendered obvious by van Reis et al. (United States Patent No. 5,256,294) (hereinafter the '294 patent). The obviousness rejection cited van Reis in light of Kunihau. In response to the Examiner's comments it should be noted at the outset that the existing independent claim within this group (claim 1) has been substantially amended herein to address a variety of the Examiner's concerns as well as to more accurately reflect the metes and bounds of the current invention. These same amendments also serve to demonstrate that the current application simply operates in a different region and with different capabilities than those provided by the teachings of van Reis as provided in light of Kondo and/or Kunihau. What is presented herein respectfully demonstrates the basic differences between the current claims and the prior art teachings of van Reis. In fact, the current invention is not something anticipated by van Reis, rather van Reis, Kondo and

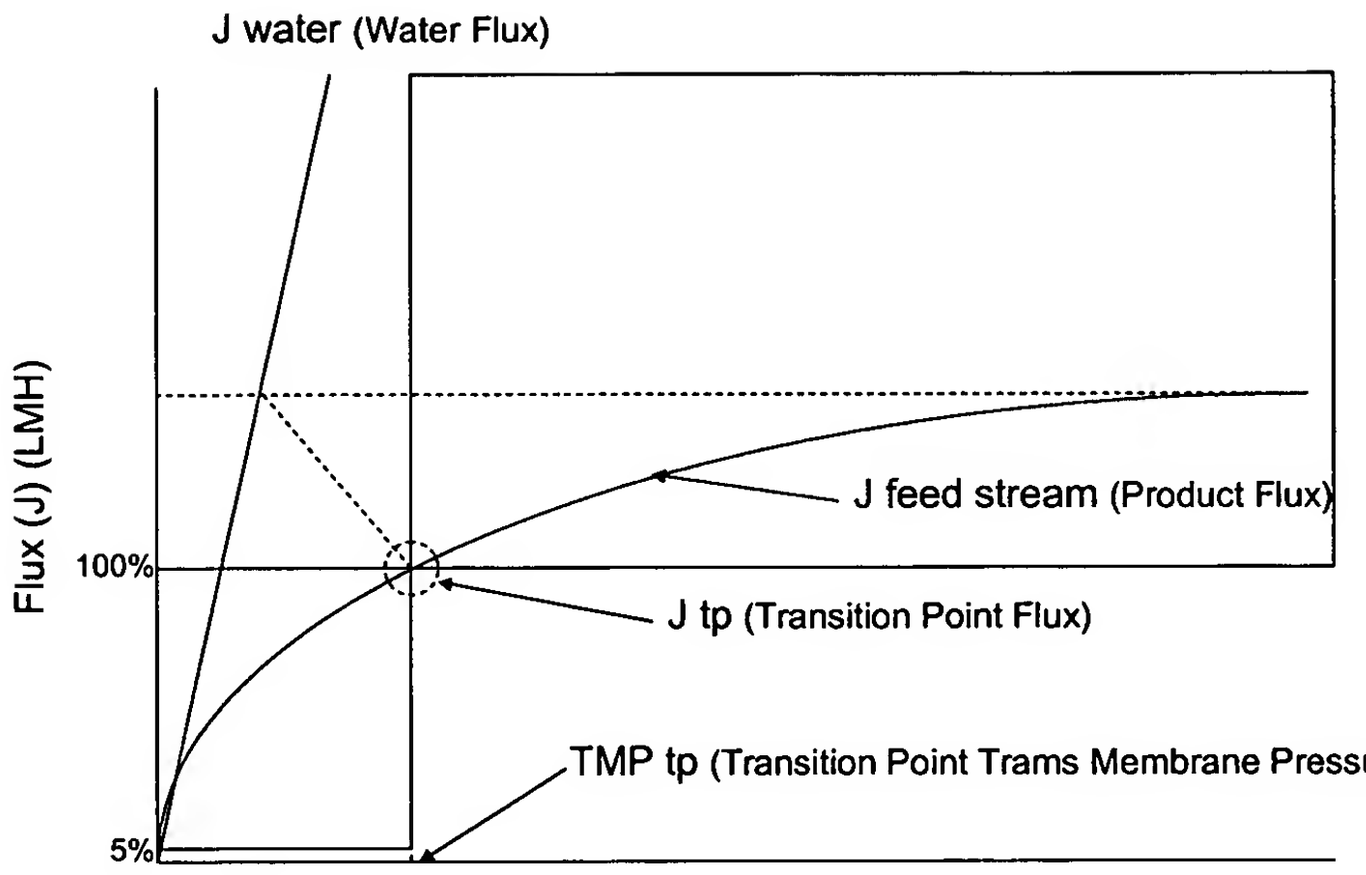
Kunihau teach against the current invention. We also provide examples of the application of the current invention useful in discriminating between van Reis and the parameters of the current invention. [All data provided herein has been published]. Should the Examiner require such Declarations from the Inventors for the examples/data points can be provided.

Diagram # A



In Diagram # A, some of the terms for Claim # 1 of the patent application are defined. With in a TMP vs. Flux graph, two major lines are draws: the Water Flux (J water) and the Product Flux (J feed stream). The Product Flux curve defines a maximum product flux (J max) which intersects the water flux line. At this point a bisecting line is drawn from the intersection of the two lines (J water and J max) to the Product Flux curve. The point at which the bisect intersects the J feed stream curve is defined as the transition point flux (J tp). A line is dropped directly down to the X axis to define the transition point transmembrane pressure (TMP tp).

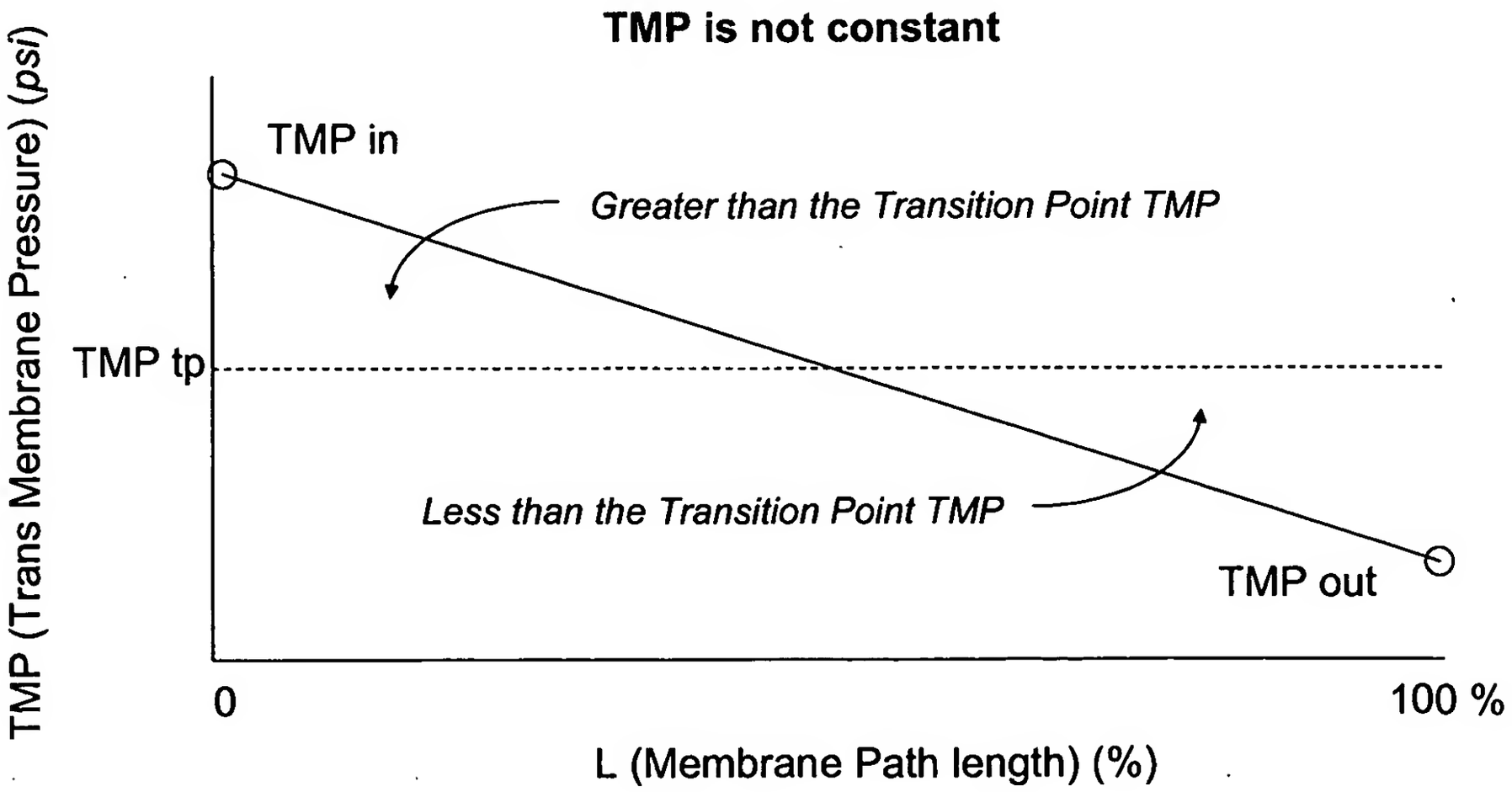
Diagram # B



- ☐ Van Reis Patent # 5,256,294
- ☐ Couto Patent Application # 10/635,117

In the Van Ries patent # 5,256,294, the zone that is in claim #1 is the area in light blue in Diagram #B bound by 100% to 5% of the Jtp and the TMP tp vertical line. The current invention rests its amended claims in the area of Diagram #B in light green bound by a Flux greater than 100% of the Jtp and the TMP tp vertical line. Please note Examples #1 to 10 attached.

Diagram # C

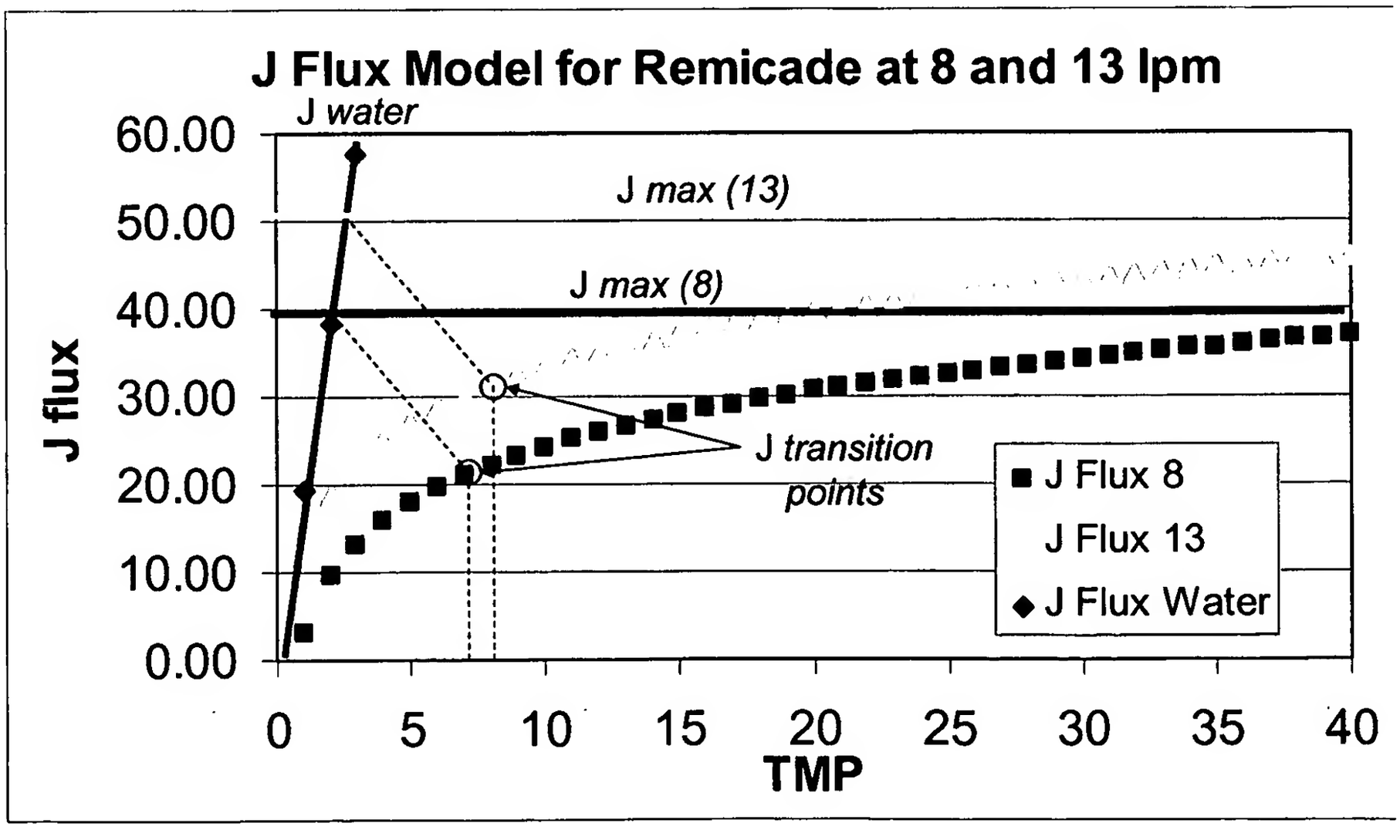


In Diagram # C, additional terms for Claim #1 of the patent application are defined as per the specification. With in a Membrane path length vs. TMP graph, a major line is draws from the membrane inlet TMP (TMP in) to membrane outlet TMP (TMP out). We previously defined on Diagram # A, a point of the X axis as the transition point transmembrane pressure (TMP tp). In claim # 1 of the Van Reis '294 the TMP is stated to be substantially constant and at a level no greater than the TMP tp vertical line. Respectfully, the instant patent application denotes the parameters in Diagram # C that are not constant and include TMPs at a level greater than the TMP tp vertical line. This data can also be illustrated in Diagram # D.

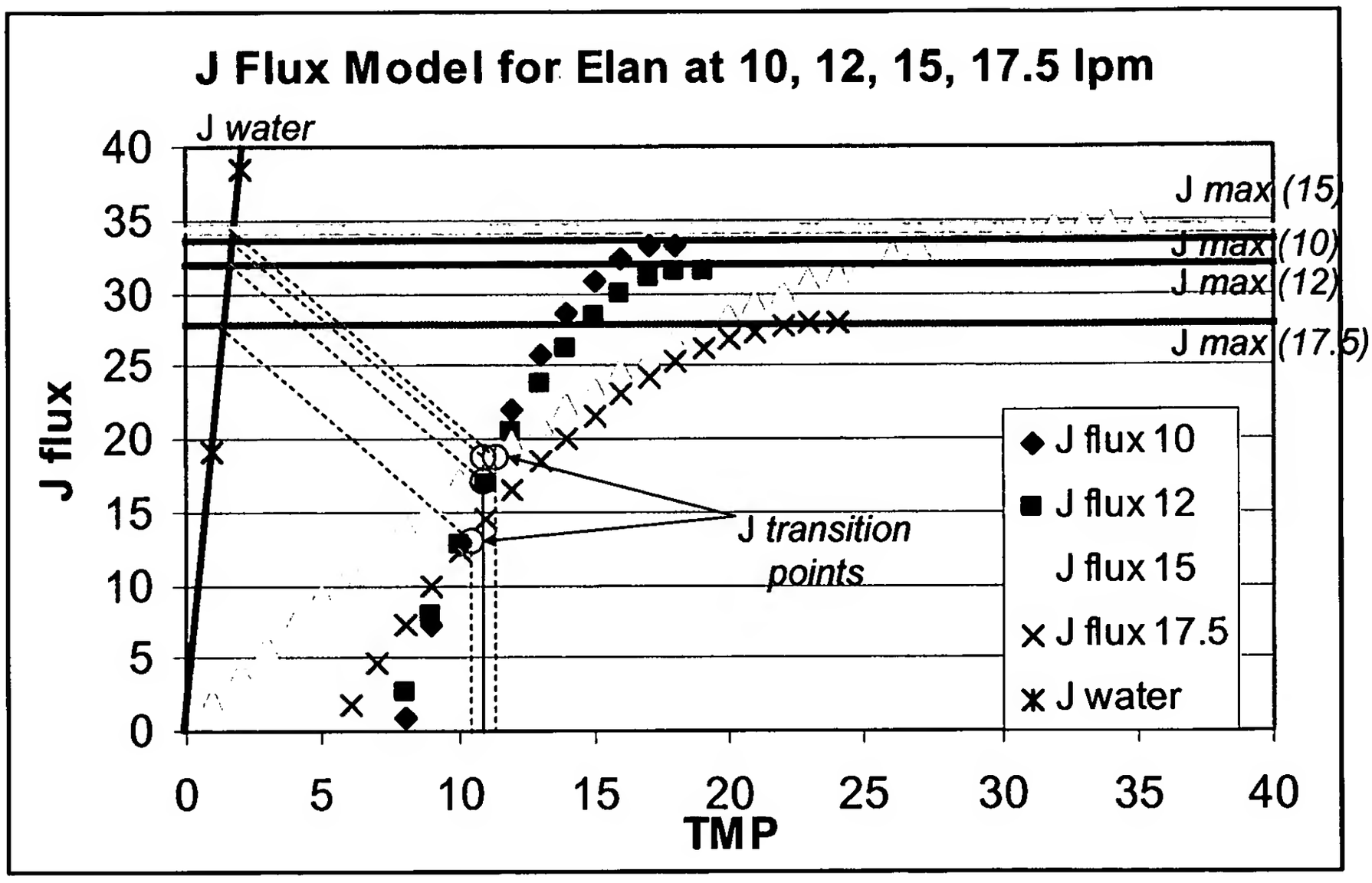
Diagram # D

Run Number	Average TMP Inlet (psi)	Average TMP Outlet (psi)	TMP Transition Point (psi)
1	8.43	-2.43	3
2	2.64	-0.92	1.5
3	5.66	1.93	0.58
4	4.58	0.01	3
5	3.76	2.23	1.5
6	4.92	0.75	1.5
7	4.42	1.93	2.5
8	5.17	0.83	4

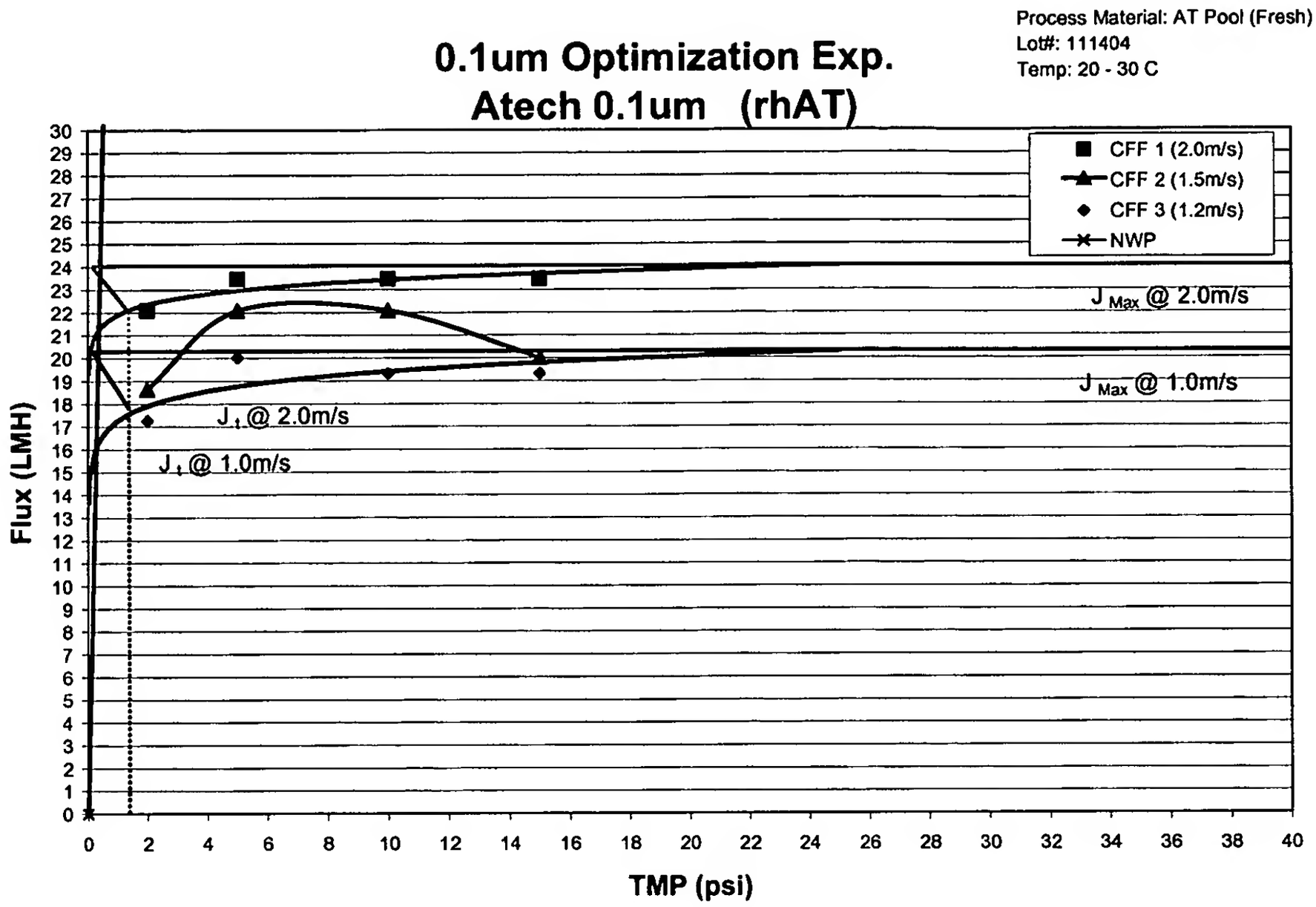
Example #1



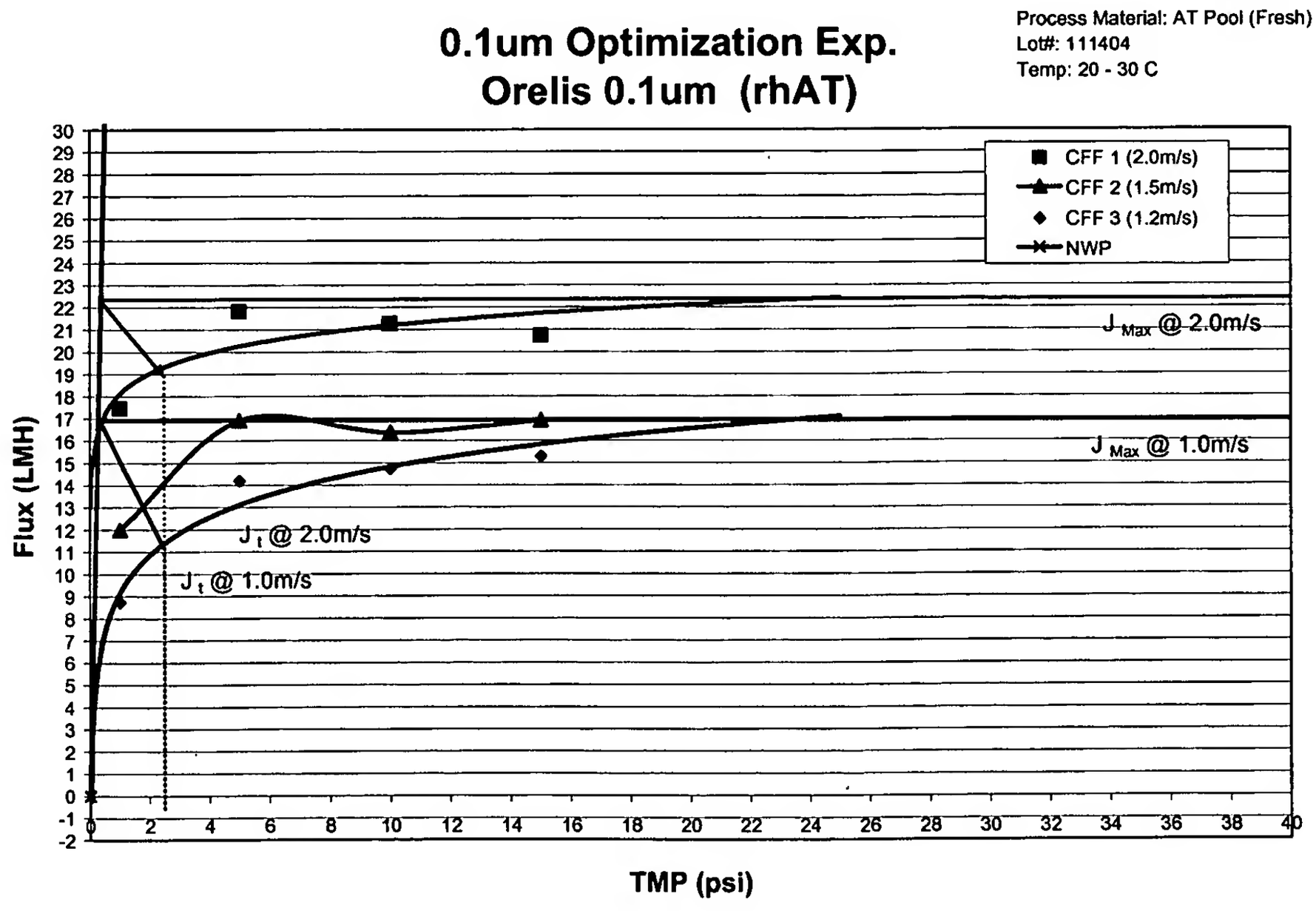
Example #2


J Flux Model for Elan at 10, 12, 15, 17.5 lpm
J water
J max (15)
J max (10)
J max (12)
J max (17.5)
J flux
TMP
J transition points
J flux 10
J flux 12
J flux 15
J flux 17.5
J water
0
5
10
15
20
25
30
35
40

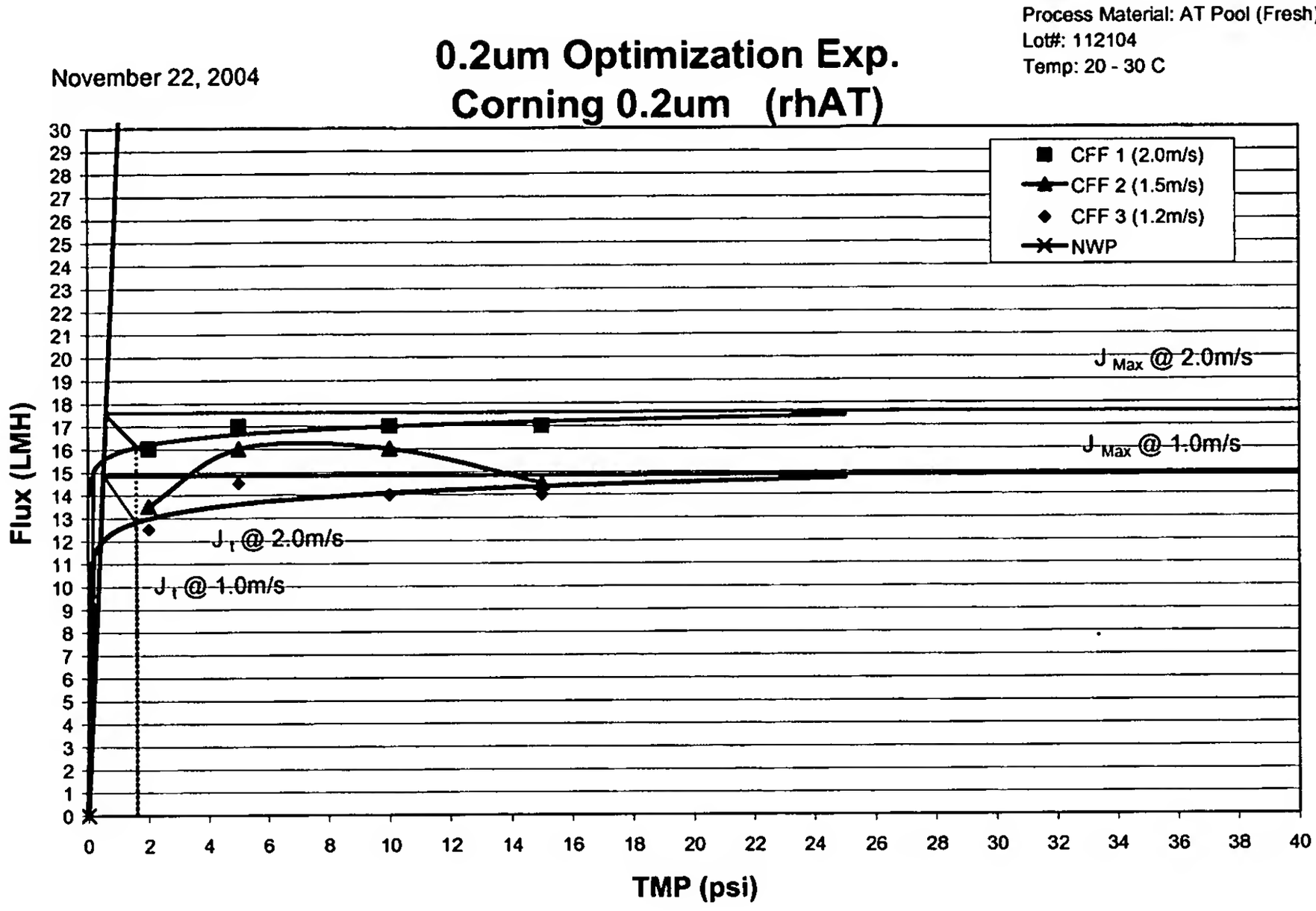
Example #3



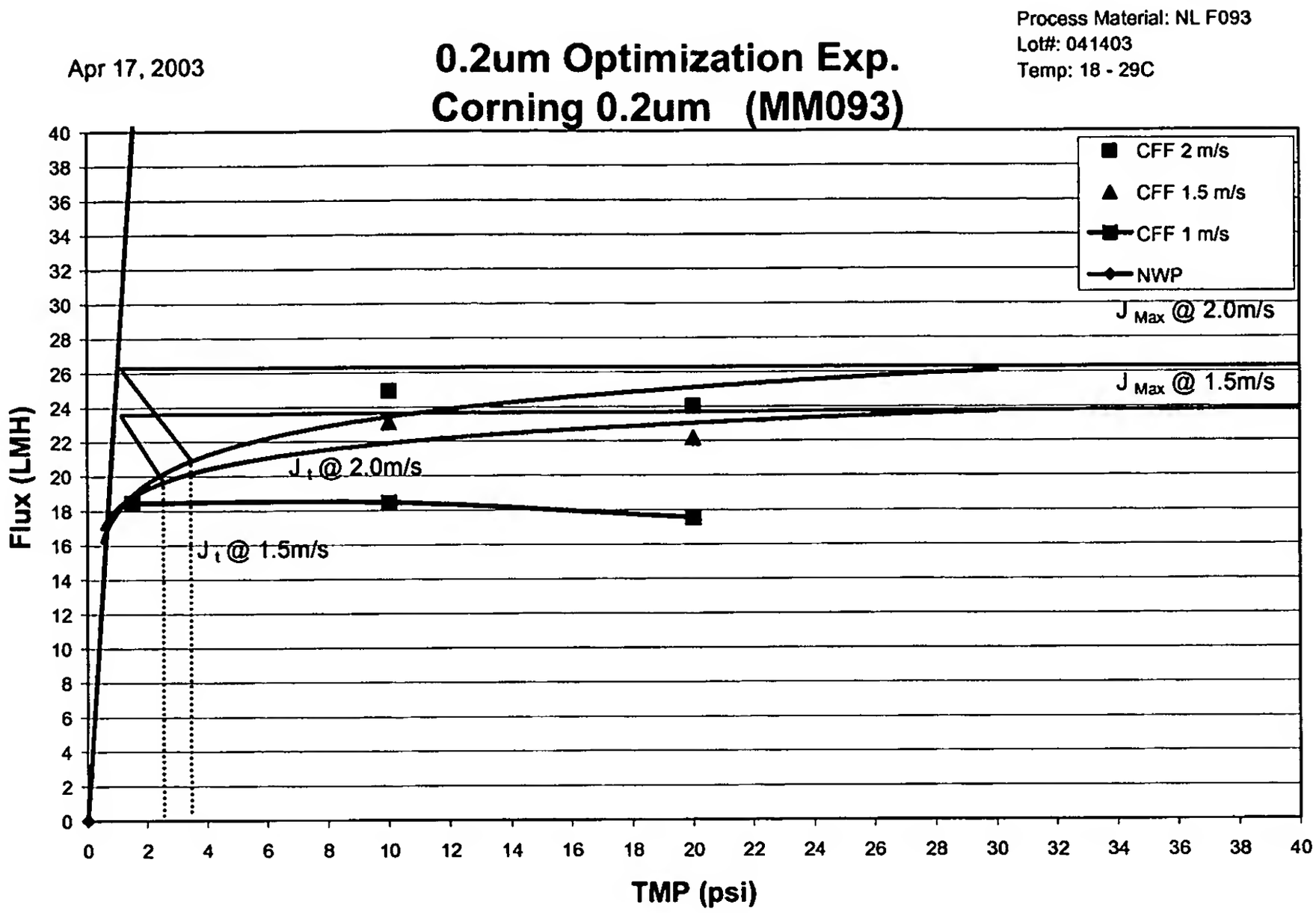
Example #4



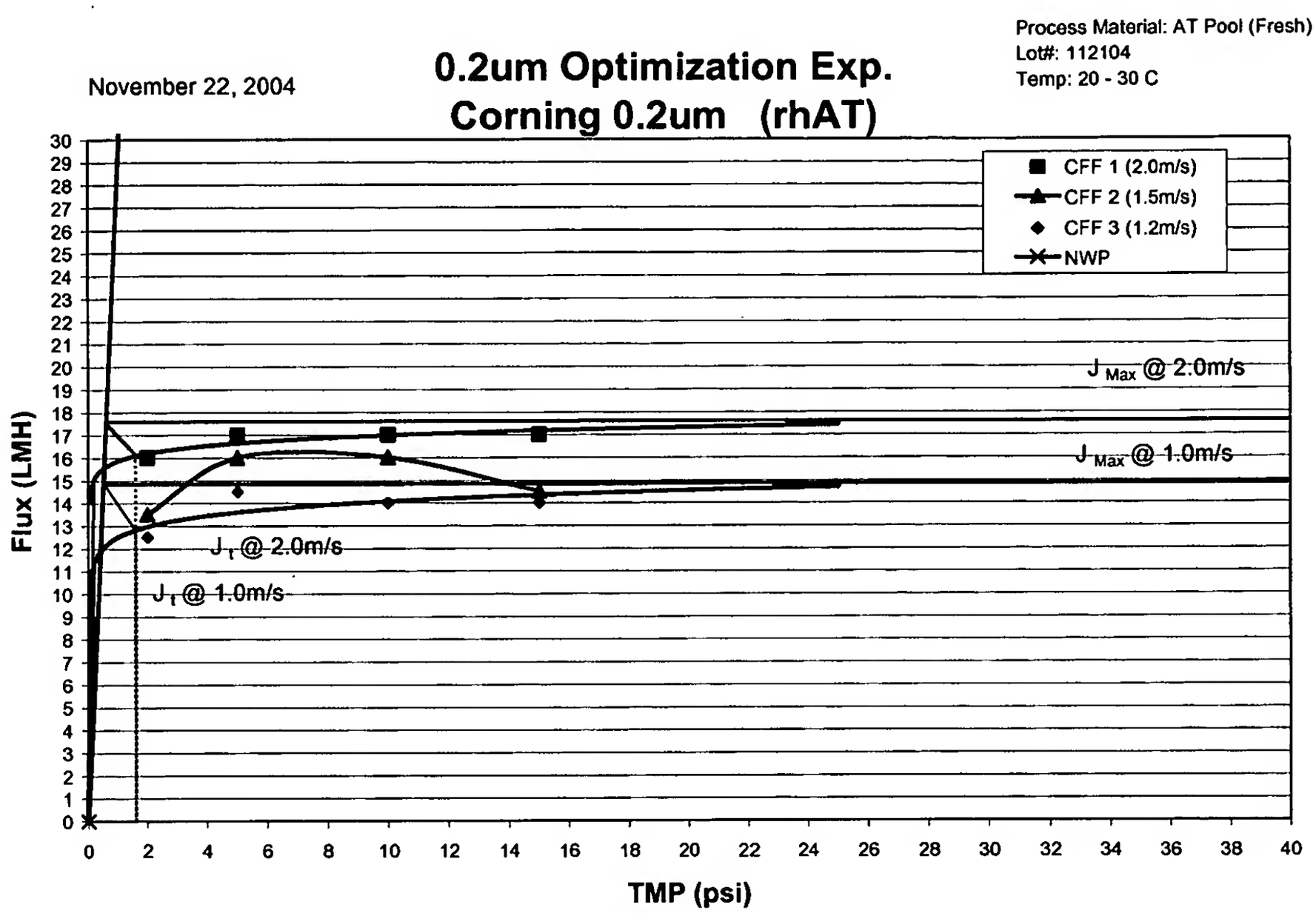
Example #5


November 22, 2004
0.2um Optimization Exp.
Corning 0.2um (rhAT)
Process Material: AT Pool (Fresh)
Lot#: 112104
Temp: 20 - 30 C
CFF 1 (2.0m/s)
CFF 2 (1.5m/s)
CFF 3 (1.2m/s)
NWP
J Max @ 2.0m/s
J Max @ 1.0m/s
J t @ 2.0m/s
J t @ 1.0m/s
Flux (LMH)
TMP (psi)

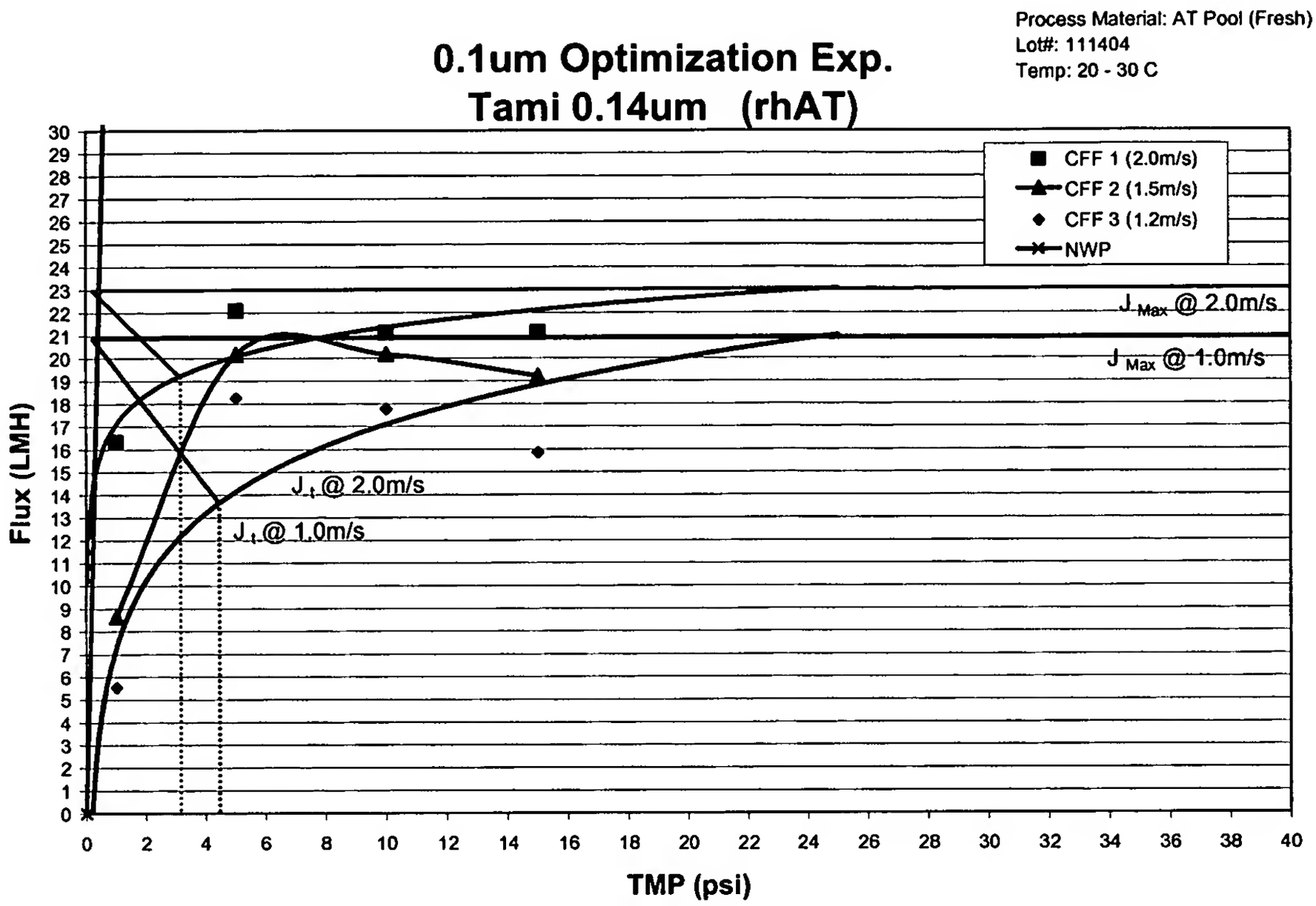
Example #6


Process Material: NL F093
Lot#: 041403
Temp: 18 - 29C
Apr 17, 2003
0.2um Optimization Exp.
Corning 0.2um (MM093)
CFF 2 m/s
CFF 1.5 m/s
CFF 1 m/s
NWP
J Max @ 2.0m/s
J Max @ 1.5m/s
J t @ 2.0m/s
J t @ 1.5m/s
Flux (LMH)
TMP (psi)
0
2
4
6
8
10
12
14
16
18
20
22
24
26
28
30
32
34
36
38
40

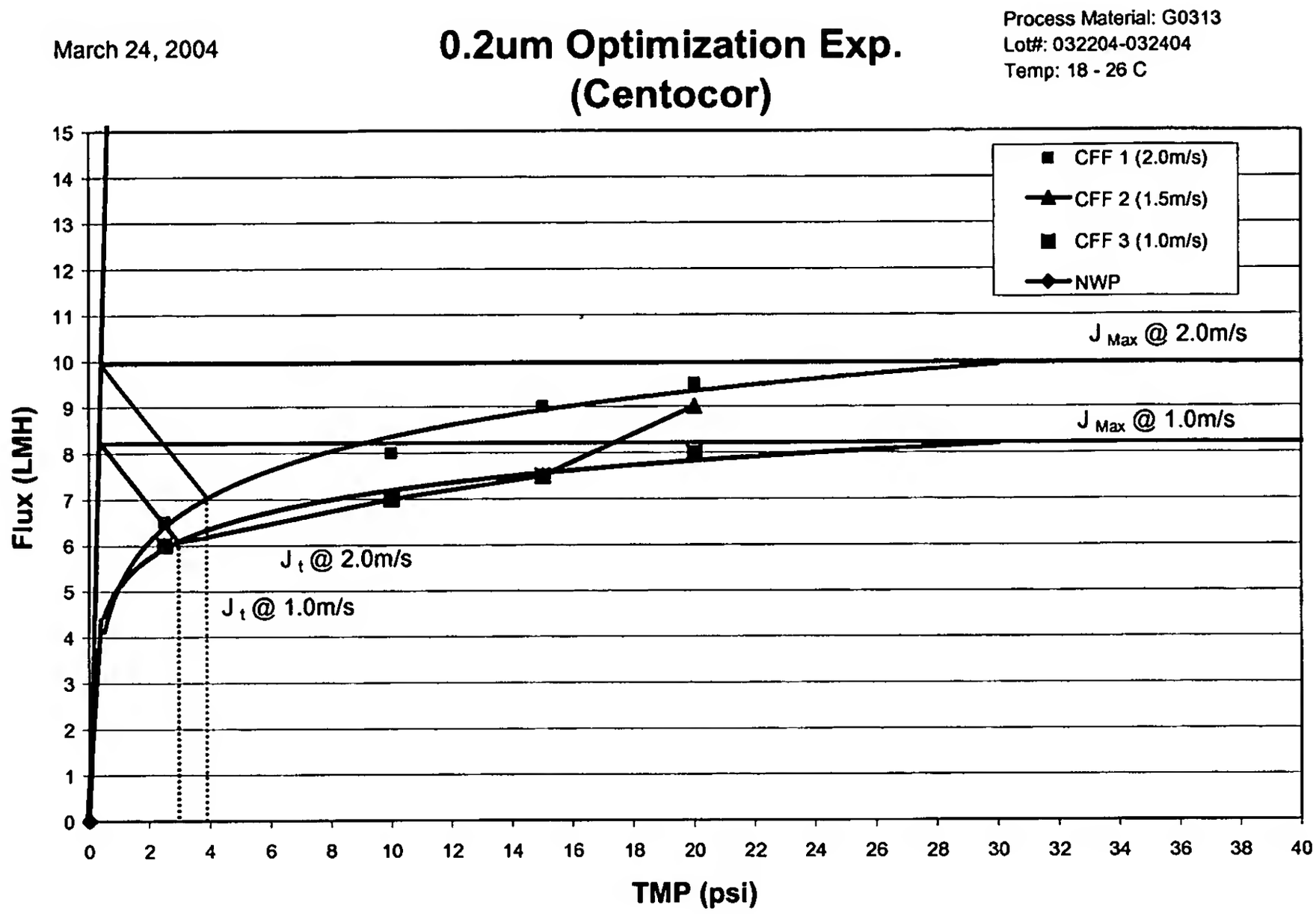
Example #7


November 22, 2004
0.2um Optimization Exp.
Corning 0.2um (rhAT)
Process Material: AT Pool (Fresh)
Lot#: 112104
Temp: 20 - 30 C
CFF 1 (2.0m/s)
CFF 2 (1.5m/s)
CFF 3 (1.2m/s)
NWP
J Max @ 2.0m/s
J Max @ 1.0m/s
J t @ 2.0m/s
J t @ 1.0m/s
Flux (LMH)
TMP (psi)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40

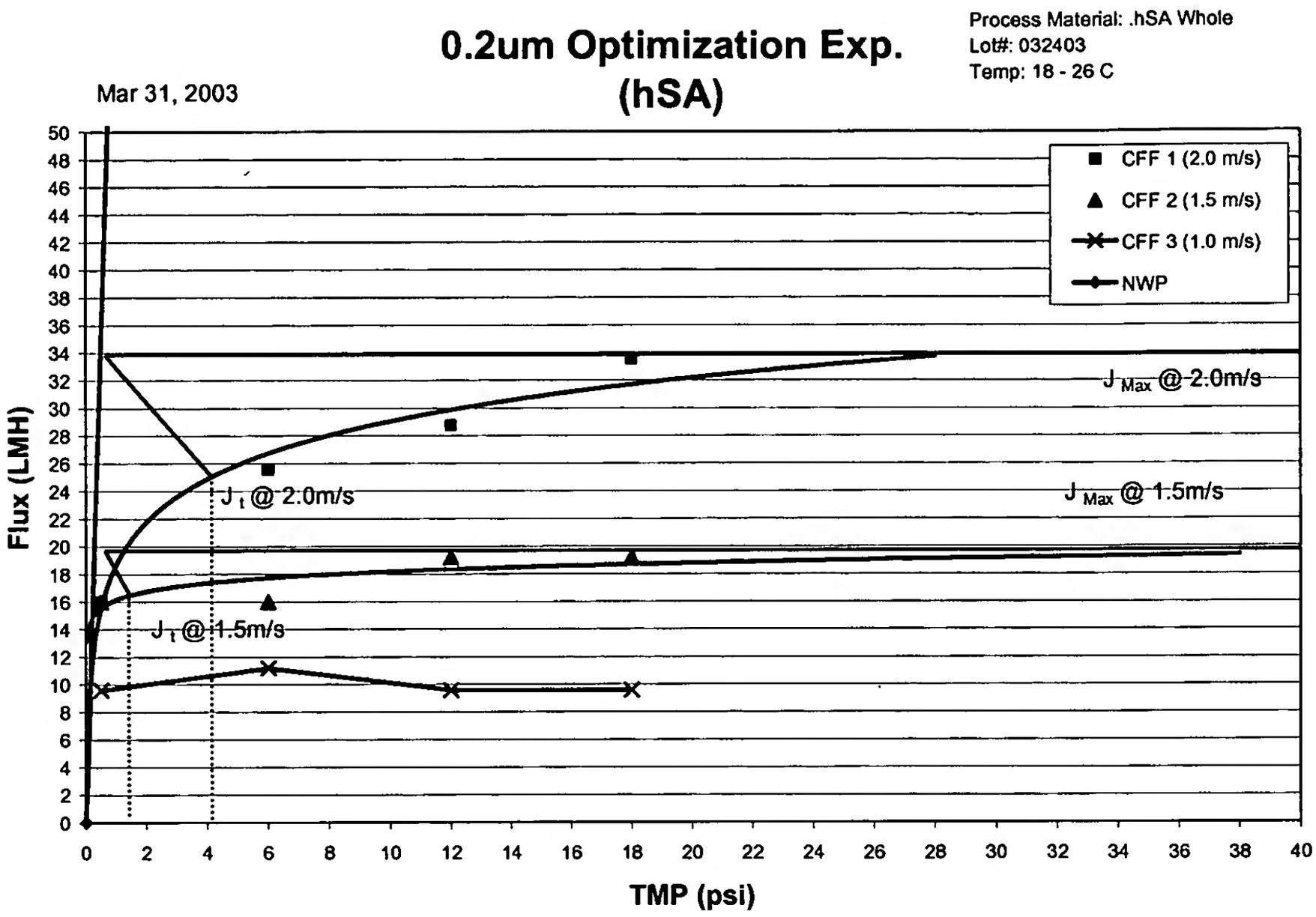
Example #8


Process Material: AT Pool (Fresh)
Lot#: 111404
Temp: 20 - 30 C
0.1um Optimization Exp.
Tami 0.14um (rhAT)
CFF 1 (2.0m/s)
CFF 2 (1.5m/s)
CFF 3 (1.2m/s)
NWP
J Max @ 2.0m/s
J Max @ 1.0m/s
J t @ 2.0m/s
J t @ 1.0m/s
Flux (LMH)
TMP (psi)

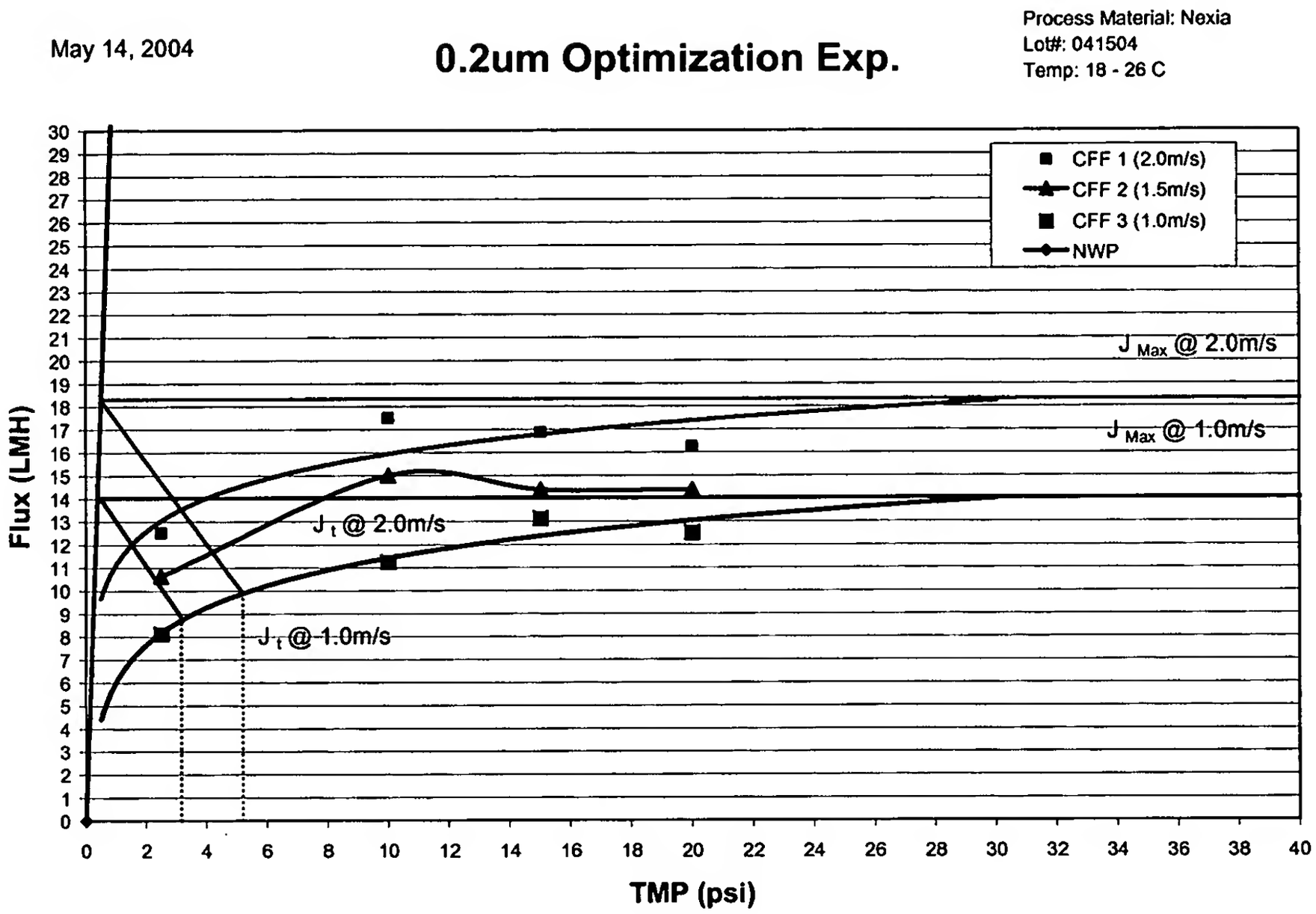
Example #9


March 24, 2004
0.2um Optimization Exp.
(Centocor)
Process Material: G0313
Lot#: 032204-032404
Temp: 18 - 26 C
CFF 1 (2.0m/s)
CFF 2 (1.5m/s)
CFF 3 (1.0m/s)
NWP
J Max @ 2.0m/s
J Max @ 1.0m/s
J t @ 2.0m/s
J t @ 1.0m/s
Flux (LMH)
TMP (psi)
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
0
2
4
6
8
10
12
14
16
18
20
22
24
26
28
30
32
34
36
38
40

Example #10


0.2um Optimization Exp.
(hSA)
Mar 31, 2003
Process Material: .hSA Whole
Lot#: 032403
Temp: 18 - 26 C
CFF 1 (2.0 m/s)
CFF 2 (1.5 m/s)
CFF 3 (1.0 m/s)
NWP
J Max @ 2.0m/s
J Max @ 1.5m/s
J t @ 2.0m/s
J t @ 1.5m/s
Flux (LMH)
TMP (psi)
0
2
4
6
8
10
12
14
16
18
20
22
24
26
28
30
32
34
36
38
40
42
44
46
48
50

Example #11



Milk is a Unique Feedstream

Milk chemistry and composition is a very unique and different starting material from a separation and filtration point of view. Milk is a highly complex and fragile mixture of fat and proteins in water with more than 200 recognized constituents (see Blanc, 1981). Moreover, the number of recognized constituents continues to steadily increase as analytic techniques have been improved. The structure and composition of fat globules, casein micelles in gel networks, nano-droplet dispersions, globular proteins, and lipoprotein particles have the malleability to allow them to be made into hundreds of butter, cream, yogurt, and cheese products. It is comprised of > 6% solids and contains high levels of protein (~ 70 grams per liter) as well as many different kinds of fat. Fat globules and Casein Micelles are both greater than micron sized particles that cause issues in milk filtration and cleaning. In addition, calcium, phosphate and many other minerals are found in milk that makes the overall chemistry quite complex. These properties of milk make it an incredibly complex chemical composition and its properties are the kinds that

chemists and physicists are now only beginning to recognize or understand. Therefore, the development, use, processing and purification of a desired exogenous protein out of the lactation products of such modified animals is an extremely complex undertaking. Added to this complexity is the need to insure that said exogenous protein remains or can be made biologically active. In the present invention the Applicants found methods to accomplish this task. This ability is not provided for, explained, objectified, or fully understood by the prior art presented by the Examiner generally and specifically with regard to van Reis et a., ('294). Reconsideration of the rejection of the claims under §§ 35 USC 102 & 103 is respectfully requested.

As previously pointed out amended claim 1 recites several elements not present or suggested in any of the teachings of Van Reis, with amendment these have grown to include:

a) usage of milk as a feedstream;
b) primary usage of ultrafiltration as opposed to microfiltration;
c) operates different flux level/pressure;
d) different pressure variances: and,
e) operates in a different range and under very different parameters.

None of the elements a-e are disclosed in the van Reis reference. Therefore, it is respectfully proposed that the rejection of claim 1 for anticipation by the Van Reis reference is overcome either as an anticipatory reference or one that can provide a basis for an obviousness rejection.

Dependent claims 2-6 and 10-71 being dependent upon and further limiting independent claim 1, should also be allowable for those reason, as well as for the additional recitations they contain. Reconsideration of the rejection of amended claims 1-6 and 10-71 under 35 U.S.C. § 102(b), is respectfully requested. New claim 72 carries limitations similar to those found in independent claim 1. Applicants therefore respectfully request favorable consideration claims 1-6 and 10-72 under 35 U.S.C. § 102(b) and § 103(a), in view of the above amendments, examples and remarks.

Please note that a **Notice of Appeal** has been filed herewith.

Other than a fee for the extension of time no fee is deemed necessary in connection with the filing of this Amendment after Final Rejection. However, the Commissioner is authorized to charge any fee which may now or hereafter be due for this application to GTC Biotherapeutics' Deposit Account No. 502092.

Applicants respectfully submit that the pending claims of this application are in condition for allowance, and that this case is now in condition for allowance of all claims therein. Such action is thus respectfully requested. If the Examiner disagrees, or believes for any other reason that direct contact with Applicant's attorney would advance the prosecution of the case to finality, the Examiner is invited to telephone the undersigned at the number given below.

Early and favorable action is earnestly solicited.

Respectfully Submitted,

Date: June 16, 2005 By: _____

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